SOLARverein

Berlin-Brandenburg e.V.

Citizen solar facilities – collective use of sun-power

www.solarverein-berlin.de

SOLARverein Berlin-Brandenburg e.V.

The members of the association so far achieved the impossible:
to find a group of citizens in Berlin who intended to invest in the future energy photovoltaics.

- **August 2003**: "**Solarverein Steglitz-Zehlendorf**" founded. **Februar 2004**: name change into "**Solarverein Berlin e.V**.",
- **März 2007**: name change into "**Solarverein Berlin-Brandenburg e.V**.„

Many good reasons exist for this:

- There are a lot of solar initiatives around Berlin, which are interested to use the know-how of the solar Association
- Brandenburg opens new perspectives for the realization of project ideas
- The press response is much greater with the addition of Brandenburg media

Solarverein Berlin-Brandenburg e.V.

The Board:
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BLZ 100 900 00, Volksbank Berlin

Solar systems:

- **thermally solar facility:**
  - produces hot water
  - relatively small collector area
  - relatively low costs
- **photovoltaic solar facility:**
  - produces electricity, which normally is fed into the public grid
  - **profitable until 5 kWp**, that means **20.000 €**
  - **large roof area** required

Citizens solar-facility

- Financing of a photovoltaic solar system through financial contributions by many **environmental engaged citizens**.
- **Everybody may participate**.
- according to the own financial possibilities. subscription of **one or several shares**.
- normal are subscription-values between **500 €** and **10.000 €.**

Stromeinspeisung

- The electricity produced by the photovoltaic-facility is going direct into the power supply system.
- The compensation is guaranteed by law and paid over 20 years by the local electricity provider.
- The pay rate is derived from the "Renewable Energies Act (EEG)“.
- After about 12 years the percentage amount is brought back - the distribution in the 8 years thereafter is profit.

The Renewable Energy Law = EEG

- The EEG was decided in 2000 in the Bundestag. The amended act came into force definitively on 1.8.2004.
- **The goal to increase: The proportion of renewable energy sources in electricity significantly.**
- The EEG allows to operate profitably a photovoltaic system.
- Network operators will be obliged to purchase electricity from renewable energy sources a priority.
- The guaranteed payment period is 20 years respectively.
- Since reducing the investment cost of PV systems in the next few years, lower levels of feed-in tariffs, the later the plant will be constructed (scale of 5% per year).

Citizen solar-installations in Berlin and Brandenburg

Operator: Solarverein Berlin-Brandenburg e.V.
Total: 200 kWp, 200 shareholders, 1.021.000 Euro

- **Bürger-Solar Berlin 1 GbR**, 5 kWp, Standort Zehlendorf Süd, Werkgemeinschaft für Berlin-Brandenburg gGmbH, 2004
- **Bürger-Solar Berlin 2 GbR**, 5 kWp, Standort Zehlendorf Süd, Werkgemeinschaft für Berlin-Brandenburg gGmbH, 2004
- **Bürger-Solar Berlin 3 GbR**, 30 kWp, Standort Spandau, OSZ TIEM, 2004
- **Bürger-Solar Berlin/Brandenburg Teltow GbR**, 30 kWp, Standort Teltow, Bruno H. Bürgel Oberschule, 2005
- **Bürger-Solar Berlin/Brandenburg Werder GbR**, 10 kWp, Standort Töplitz, Einfamilienhaus der Familie Vogl, 2006
- **Bürger-Solar Berlin/Brandenburg Klaistow GbR**, 20 kWp, Standort Klaistow, Scheune von Bernd Kistein, 2007
- **Bürger-Solar Berlin/Brandenburg Kuhhorst GbR**, 36,9 kWp, Standort Kuhhorst, Ökohof der Mosaik Werkstätten für Behinderte gGmbH, 2008
- **Bürger-Solar Berlin-Weißensee GbR**, 58 kWp, Standort Berlin-Weißensee, Oberstufenzentrum Gastgewerbe, 2009
- **Bürger-Solar Berlin-Brandenburg Temnitz GbR**, 38,7 kWp, Standort Wlasleben, Amt Temnitz, Verwaltungsgebäude, 2009

Citizen solar-installations in Brandenburg

operators: other institutions

- **Beelitz** one citizen solar-installation, 10,65 kWp, 2004
- **Falkensee** two citizen solar-installations, 10 / 30 kWp, 2005/ 2007
- **Caputh** one citizen solar-installation 9,5 kWp, 2006
- **Potsdam** one citizen solar-installation, 9 kWp, 2006
- **Brandenburg** one citizen solar-installation 6,4 kWp, 2007
- **Kleinmachnow** one citizen solar-installation, 12 kWp, 2007
- **Eberswalde** one citizen solar-installation, 11,9 kWp, 2007
- **Neuenhagen** one citizen solar-installation, 10,1 kWp, 2007

and: **Caputh Nr. 2, Werder, Cottbus, Lausitz, Neustrelitz, Hohenneuendorf ,**
additionally: **Porta Westfalica und Tostedt/Nordheide**

and a lot of others!

For a citizens solar system you have to find a form of society:

the simplest (acc. to german law):
GbR = Gesellschaft bürgerlichen Rechts (Society of civil law)

Effort and the conditions for the formation of a GbR

- The loss is the lowest compared to all other forms of societies or the foundation of an association.
- The company formulated its own contract, which must not be approved by any official body, but only regulates the internal business.
- There are only needed two people to start a foundation, when about 1 / 3 of the total amount on reservations is available.
- All shareholders of the GbR have to sign shares.
- The manager has also to be shareholder (you can settle the contract, that he brings nothing but work instead of money into the GbR).
- The only necessary administrative act is to notify the GbR at the Inland Revenue.
- The GbR is **not!** to be registered at the trade office!

„To do“ in the first year

- To find shareholders through outreach, public relations, lectures, information events, homepage etc.
- Manage your reservations: Creating mailing lists and address lists
- Answer questions
- Founding meeting convened
- To notify the GbR at the Inland Revenue
- To apply for credit, if necessary
- Submit tax returns

„To do“ in the following years:

- To report the annual electricity output to the Energy Group
- To control the input of the feed
- Min. convene one general meeting each year in which the withdrawal is established for each partner
- Transfer of profits to the shareholders
- Create and submit tax returns with the Inland Revenue
- To inform the shareholders about the percentages of the tax return

Some hints for a constituent assembly of a GbR:

- The contract can be discussed by all shareholders.
- But he is matched only by the subscribers, ie, after the discussion, the units are completed - so you will become a shareholder. Only those will vote at the subsequent decisions.
- There are two attendance records: a general for the beginning of the meeting. The second, Appendix 1, will be filled after the drawing and is part of the contract.
- All who draw at a later date are after completion of the form, co-partner - the decision is up to the manager.
- The GbR is „closed“ if the necessary investment is achieved.

Agenda of constituent assembly "xxxx GbR" on xx.xx.2007

ITEM 1 Welcome
ITEM 2 Information
- Genesis
- Technique of a photovoltaic system
- Expectation of profit from the feed
- Financing
- GbR model
- Contractual link between the future GbR and the club xxx

ITEM 3 Discussion of the shareholders' agreement
ITEM 4 creating the list of the shareholders
ITEM 5 Vote of the shareholders agreement by the shareholders
ITEM 6 Election of the management by the shareholders
ITEM 7 detailed questions
- Total capital for the GbR
- Amount of credit
- Appointment of members of the "confidential self-disclosure"
- Bridge Loan from shareholders for VAT or bridging loan disbursement
- Choice of installation company

ITEM 8 Miscellaneous

To avoid risks, you should conclude a comprehensive insurance.

- The **public liability insurance** covers personal and property damages from third parties.
- The **electronics insurance** covers yield losses that may arise due to technical problems, storms, hail or vandalism.
- Complete price for a 5 kWp-facility ca. 200 € a year, 30 kWp-facility ca. 550 € a year.

  (generally accepted is the LUMIT-Insurance by the Mannheimer Versicherungs-AG)

Liability problem GbR

- **Basically, all the members of a GbR are individually liable with her personal assets for the liabilities of the GbR.**

- To minimize the risk:
  - Insurances.
  - **Construction and operation** of the plant will be **transferred to a society**.
  - All resulting **contracts** with third parties (such as roofing license agreement, insurance) **closes the association**.
  - The **feed** goes directly **to the GbR**, which takes over the accounting and settlement with the shareholders.
  - These roles are subject to a contract between the association and the GbR.
  - **For non-insurable damage to third parties that might arise from the construction or operation of the plant, the association is liable under his associations assets, but not the shareholders of the GbR.**

Relevant questions for investors:

- Efficiency of the total investition
- Distributions
- Society Form / Liability and Risk
- Term and transferability
- Ethical aspects.

Financing

Total:	30 kWp-Anlage: ca 100.000 € (netto)
Subscription amount:	100 shares of 1.000 Euro
Earnings estimate:	850 kWh for each kW installed capacity, feed 0,4301 € per kWh, Income ca **10967** € pro Jahr, for 20 years **219.350 €**
Running costs:	ca 30.000 € for the whole contract
Distribution:	190.000 € divided into 100 shares of 1000 €: 1900 € in 20 years per year ca 95 €

after ca 12 years the share is paid back

No responsibility !!!!!

Mixed-finance citizen solar facility/ Bank Loan

- Uncomplicated in the German Umweltbank, as there should be only 3-5 associates the personal self-disclosure - that is, to disclose their financial relationships. The Umweltbank has the most expertise. She takes the photovoltaic system as a safety.
- financial benefits for investors by co-financing: The dividend per shareholder is higher, because the profit is divided among fewer participants.

Funding for Citizens Solar Shares / Bank Loan

Total:	30 kWp-Anlage: ca 100.000 € (netto)
Subscription amount:	60 shares of 1.000 €, 40.000 € Kredit
Earning estimate:	850 kWh for each kW installed capacity, feed 0,4301 € per kWh, income ca **10967** € per year, for 20 years **219.350 €**
Running costs :	ca 30.000 € for the whole contract
disitribution:	190.000 € in 20 years
Bank loan, duration 10 Jahre:	50.000 €
shareholders, 60 à 1.000:	for the first 10 years 75 € per year thereafter: 158 € per year total distribution fur each 1.000€: 2330 €

No responsibility !!!!!

Yield data of the citizens solar facilities in 2007/8

(Results shown in the data logger)

Bürger-Solar Berlin 1 GbR:
(0,574 € pro kWh)

Bürger-Solar Berlin 2 GbR:
(0,574 € pro kWh)

Bürger-Solar Berlin 3 GbR:
(0,574 € pro kWh)

Bürger-Solar Berlin/Brandenburg Teltow GbR:
(0,5453 € pro kWh),

Bürger-Solar Berlin/Brb. Werder GbR:
(0,518 € pro kWh),

Bürger-Solar Berlin/Brb. Klaistow GbR:
(0,4921 € pro kWh)

Bürger-Solar Berlin/Brb. Kuhhorst GbR:
(0,4675 € pro kWh)

	2007	2008
Current Yield (kWh)	4.963	4.801
feed: (€)	2.482	2.401
distribution / 1000 €	**100,-**	**100,-**
Current Yield (kWh)	4.968	4.749
feed: (€)	2.484	2.375
distribution / 1000 €	**100,-**	**100,-**
Current Yield (kWh)	25.646	24.496
feed: (€)	12.823	12.248
distribution / 1000 €	**110,-**	**90,-**
Current Yield (kWh)	28.995	28.189
feed:(€)	14.498	14.095
distribution / 1000 €	**100,-**	**100,-**
Current Yield (kWh)	9.382	9.183
feed:(€)	4.691	4.592
distribution / 1000 €	**60,-**	**100,-**
Current Yield (kWh)	4.564	19.818
feed: (€)	2.282	9.909
distribution / 1000 €	**30,-**	**100,-**
Strom-Ertrag (kWh)		3.902
Feed:(€)		1.951
distribution / 1000 €		

„Tax Questions“

Distribution:	the money, which will be proportionately paid annually to the shareholders.
Income:	the amount that is communicated to the Inland Revenue.

Distribution

Income is resulting from the feed-in compensation for EEG.

- After deducting operating costs and establishment of the calculated reserve you know, which amount may be taken each year.

Calculation of the income
Current expenses

- normal period expenses (insurance, rent, administration)
- Interest for borrowed capital
- Depreciation (depreciation base is the purchase price)

Income Statement

- Level society: profit is the same for all shareholders. Profit is distributed according to participation rate and communicated with the inland revenue.
- Partner Level: Type of income is a trade or a business. In appendix GSE of the tax return to be indicated as equity income.

Depreciation vote

- Linear, ie, evenly distributed for 20 years.
- Regressive, ie, a maximum of three times the straight-line depreciation, ie, a maximum of 15%, according to first only for the years 2008 and 2009 Act. Amortization begins in the month of the start-up - not for the whole year.
- Special depreciation is the exception.

Profits of 31.12.

- For small installations, the income is determined as expenditure/income surplus account.
- Larger installations have to create a balance sheet and a profit and loss account.

Turn-over tax

- PV-system owner is entrepreneur.
- Supply of electricity is taxable transaction.
- Monthly requirement to give advance notice.
- Authorization for tax-deduction.

Business tax

- PV system is considered commercial use.
- Business tax in private companies after tax-deduction of 24.500 €.

Which buildings may be used?

- flat roof buildings (additional charge about 80 - 100 kg per m2) or sloping roof with southern exposure and about 35-degree tilt
- shading south-facing roof
- intact roofing
- anti-theft position
- short way to the point of handover to avoid long cable-ways
- 20 years inventory

Lease or license agreement

GbR or possibly an association (Verein) signs contract

- reason of rental
- level of rent and lease
- liability and insurance (completed operations liability insurance and electronic)
- engineering by GbR as the owner
- termination of the lease
- termination notice

The rent has an average of nearly 3% of the compensation for electricity fed into the grid. With the current favorable prices of the modules, the greed of the roof owners have become larger. Currently rents at the 10%!

Asking for quotes

Create specifications and corporate query

- system size
- structure of plant
- frame work
- in which Country are the modules produced
- Insurance for the building phase

What means Kilowatt-Peak (kW_p)?

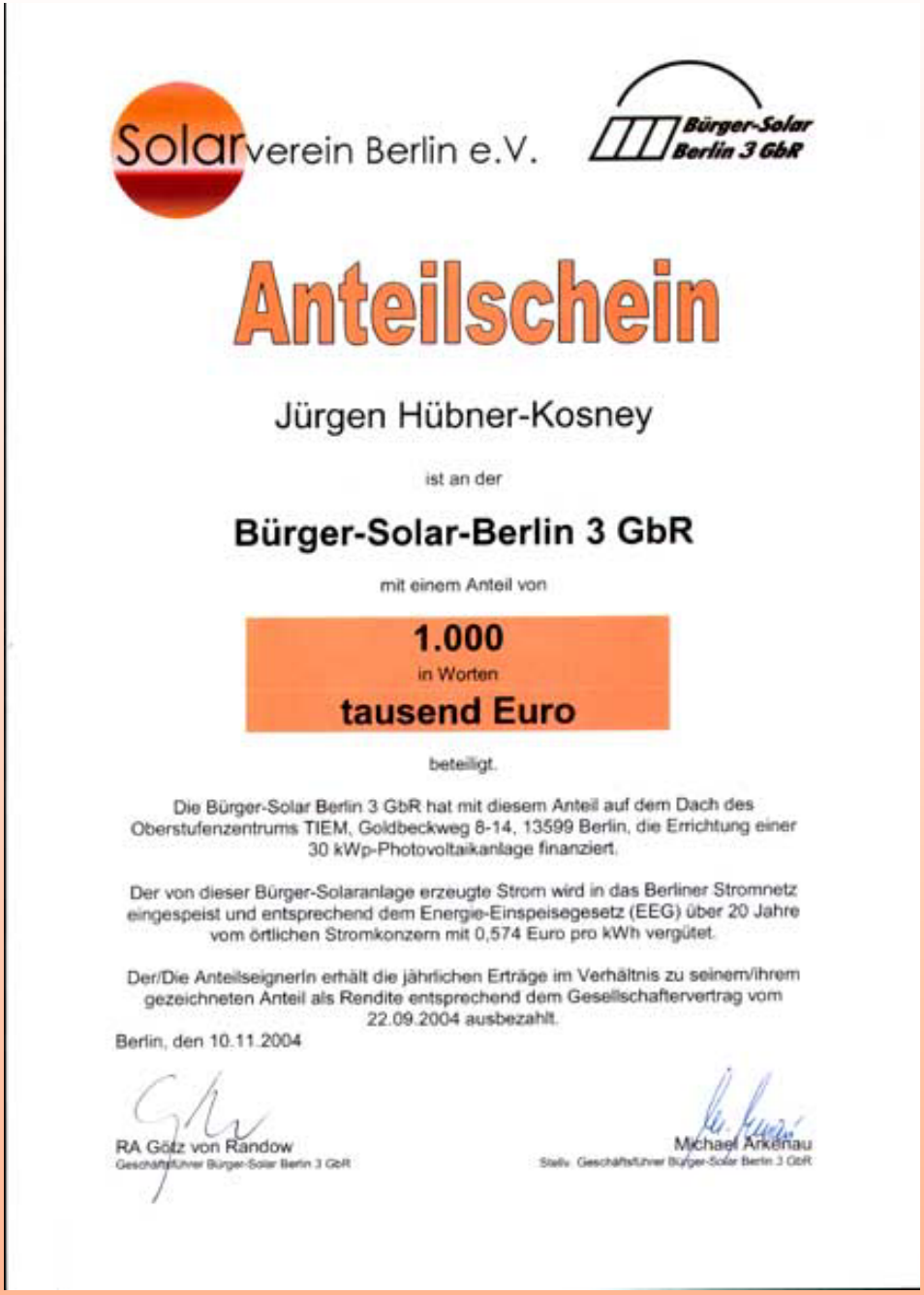
- Peak is peak. Kilowatt-peak is a measure of the electrical power that a photovoltaic system provides a maximum under optimal conditions, as measured in kW. The value is determined for each module type in the lab, but can not be achieved in practice, eg due to the module temperature.
- Value of thumb is: For an installation with 1 kWp power it takes at least 9 m2 module area.

You need help?

They will help you –

the citizen-solar-coaches!!!

Example of a fund unit



Solarverein Berlin e.V.

Bürger-Solar Berlin 3 GbR

Anteilschein

Jürgen Hübner-Kosney

ist an der

Bürger-Solar-Berlin 3 GbR

mit einem Anteil von

1.000

in Worten

tausend Euro

beteiligt.

Die Bürger-Solar Berlin 3 GbR hat mit diesem Anteil auf dem Dach des Oberstufenzentrums TIEM, Goldbeckweg 8-14, 13599 Berlin, die Errichtung einer 30 kWp-Photovoltaikanlage finanziert.

Der von dieser Bürger-Solaranlage erzeugte Strom wird in das Berliner Stromnetz eingespeist und entsprechend dem Energie-Einspeisegesetz (EEG) über 20 Jahre vom örtlichen Stromkonzern mit 0,574 Euro pro kWh vergütet.

Der/Die AnteilseignerIn erhält die jährlichen Erträge im Verhältnis zu seinem/ihrem gezeichneten Anteil als Rendite entsprechend dem Gesellschaftervertrag vom 22.09.2004 ausbezahlt.

Berlin, den 10.11.2004

RA Götz von Randow
Geschäftsführer Bürger-Solar Berlin 3 GbR

Michael Arkenau
Stellv. Geschäftsführer Bürger-Solar Berlin 3 GbR

Example of an application for membership

xxx GbR

BEITRITTSANTRAG

Name: ..... Vorname: .....

Strasse: ..... PLZ, Ort: .....

Telefon: ..... Fax/eMail: .....

Bank: .....

Bankleitzahl: ..... Kontonummer: .....

Finanzamt: ..... Steuernummer: .....

Ich beantrage meinen Beitritt zur „**xxx Gesellschaft bürgerlichen Rechts**“

mit einer Gesellschaftereinlage von

☐ 500 € in Worten: ..... €

☐ ..... €, in Worten: ..... €
(der Betrag ist durch 1000 teilbar)

Die Gesellschaftereinlage ist innerhalb von 14 Tagen nach Unterzeichnung dieses Antrages zur Einzahlung fällig. Maximal können 10.000 Euro gezeichnet werden.
Mir ist bekannt, dass ich erst mit Annahme des Beitrittsantrages durch die Geschäftsführung und Eingang meiner Einlage auf dem Konto der Bürger-Solar Berlin x GbR Gesellschafter im Sinne dieses Vertrages bin (die Kontonummer wird unmittelbar nach der GbR-Gründung mitgeteilt). Die Annahme des Beitrittsantrags wird von der Geschäftsführung schriftlich bestätigt.

Die Beteiligung wurde nicht öffentlich angeboten, mein Beitritt zur Gesellschaft erfolgt auf persönlichen Wunsch bzw. Empfehlung von .....

Ort, Datum..... Unterschrift .....

Widerrufsrecht

Der Beitritt zur „Bürger-Solar Berlin x GbR“ wird erst wirksam, wenn er nicht innerhalb von 14 Tagen schriftlich widerrufen wird. Zur Wahrung der Frist genügt die rechtzeitige Absendung des Widerrufs an die Gesellschaft.
Ich habe den Hinweis zum Widerrufsrecht zur Kenntnis genommen.

Ort, Datum..... Unterschrift .....

Der vorstehende Beitrittsantrag wird angenommen:

Berlin, ...

Für die Bürger-Solar Berlin x GbR, Geschäftsführung

Bürger-Solar Berlin x GbR
Postanschrift

Windpower

- The share of wind power now totals approximately 6.65% of Germany's net electricity consumption.
- The price of wind power plants is subject to market fluctuations. According to the German Energy Agency are the prices (in 2004) with power ratings from 100 to 1.000 kW from 615 to 870 euros and for large plants in the megawatt range from 770 to 1025 per installed kilowatt (including installation and acceptance).
- Of interest to investors of large sums of money.

Wind turbines in interactions with the environment

Impacts on wildlife, noise, shadows or modifying the landscape. In the aesthetic evaluation of wind turbines subjective feelings, habits and social attitudes play an important role.

Wind power for its own power

Airmax 24:

Cost for a 3 – 5.000 watt turbine: 8.500 €

inverters for stand-alone operation: 4.500 €

annual output 15.000 kW

www.airmax24.ch

MPP wind power:

6 KW cost of about 20.000 €

www.mpp-windkraft.de

„Electricity-autarkic“

- 4.500 kWh / year will a family of four consum for a detached family house in modern design.
- 4.500 kWh / year produced a 5 kWp photovoltaic system.
- That is: who is investing 25.000 € into such a system, is „electricity-autarkic" and generates the needed electricity itself.

SOLAR Verein

Berlin-Brandenburg e.V.

Thank you for your attention!

www.solarverein-berlin.de